ED 223 500 .   SO 014 370

AUTHOR   Davis, James A.
TITLE   Five Well Established Research Results Which I Think
                Are Probably True, Teachable in Introductory
                Sociology, and Worth Teaching.
INSTITUTION   Harvard Univ., Cambridge, Mass. Faculty of Arts and
                Sciences.
SPONS AGENCY   National Science Foundation, Washington, D.C.
PUB DATE   Jun 82
GRANT   SOC-77-03279
NOTE   32p.; Paper presented at the Annual Meeting of the
                American Sociological Association (San Francisco, CA,
                September 6, 1982).
PUB TYPE   Guides - Classroom Use - Guides (For Teachers) (052)

EDRS PRICE   MF01/PC02 Plus Postage.
DESCRIPTORS   *Computer Assisted Instruction; *Educational
                Attainment; Education Work Relationship; Family
                Characteristics; Higher Education; *Introductory
                Courses; Racial Differences; Sex Differences;
                *Sociology; *Statistical Analysis; Teaching
                Methods

ABSTRACT
        Appropriate for college level introductory sociology
classes, five units on empirical research use empirical results that
are true, demonstrable, causal, and thought-provoking. The units take
educational attainment as the main variable, drawing on data from the
decennial census and the NORC Social Surveys. Each unit begins with a
lecture, followed by students' manipulation of data on a computer,
construction of statistical tables, and discussion. In units one
through five students (1) examine the relationship between age
cohorts and educational attainment demonstrating the enormous amount
of change in educational attainment from those born in the 1880s to
those born in the 1950s; (2) analyze the effect of race and sex on
educational attainment revealing that racial and sexual educational
disadvantages decline very slowly; (3) measure the relationship
between the educational attainment of the respondent and his parents
when both parents are equal in their educational attainment and when
one parent has received a higher education than the other; (4)
examine the close tie between formal education and later occupation;
and (5) examine how age and educational attainment correlate to
liberal attitudes, by charting responses to a questionnaire on the
rights of atheists. (KC)

ED223500

SP 014 370

Five Well Established Research Results Which I Think are Probably
True, Teachable in Introductory Sociology, and Worth Teaching

James A. Davis
Harvard University and NORC
June, 1982

Introduction and Ceremonial Cage Rattling

It is by now obligatory for discussions such as this to begin with a slashing

attack on the typical Intro course as superficial, unscientific, unduly eclectic,

moralistic, thin in substance, boringly focused on antiquated concepts and ...

and I'm glad I don't have to teach it. In point of fact, every word is true.

The average Intro course is superficial, unscientific, unduly eclectic, moralistic,

thin in substance, boringly focused on antiquated concepts and I am really glad

I don't have to teach it. This symposium, however, seeks to take the hi.h road

of constructive suggestions and therefore I eschew the demagoguery of beginning

with a slashing attack on the typical Intro course for being superficial, unscien-

tific, unduly eclectic, moralistic, thin in substance, boringly focused on anti-

quated concepts -- but I'm still glad at Harvard Kiku Adatto teaches it.

So, what <u>shall</u> we include in the darned thing? My answer comes from what may

be called "Price's paradox". In the introduction to his book, <u>Social Facts</u>, a

reader of empirical research findings, James L. Price (1969, p. iii) says:

> The lack of ... factual information in introductory sociology
> textbooks and anthologies obscures the real strengths and weak-
> nesses of contemporary sociology. Sociology lacks a common set
> of concepts, has very few verified propositions, and is totally
> devoid of systematically tested theory. However, sociology has
> a large amount of comprehensive, comparative, and historical
> factual information. The feature of contemporary sociology
> that is perhaps its point of greatest strength -- its relatively
> solid factual base -- is underrepresented in introductory socio-
> logy textbooks and anthologies, whereas the features of relative
> weakness -- its concepts, propositions, and theory -- are over-
> represented.

Price's remarks are a telling comment on the state of our discipline. Why

Sociology lusts for the intellectual junk food of dehydrated 19th Century verbal

speculation and disdains the nourishing platter of knowledge about contemporary

society produced by modern research puzzles me.

I don't think we can blame our students. I yield to few in cynicism
about the intellectual motivations of Sociology undergraduates, but granted
they wish to learn as little as possible, my clinical impression is they would
much rather learn substantive findings about society than memorize fuzzy concepts,
listen to homilies on The Scientific Method, or match unfamiliar foreign names
with inscrutable doctrines.

Part of the problem is because we have gained so much empirical knowledge so
fast. When I went to graduate school in the early 1950s. '' is no exaggeration to
say virtually nothing was actually known about society -- which didn't keep them
from giving me six hour written exams on it. Findings we now consider run-of-the-
mill such as class differences in voting, religious differences in SES, the inter-
correlations of education, occupation, and income, rates of occupational mobility,
etc. were simply unknown. So we devoted hours and years to ungrounded speculation
and mulling over scraps of evidence from thinly analysed, small scale studies of
unrepresentative samples. So many of us have invested so much time in mastering
pre-scientific Sociology we feel it must be Important and hence appropriate for
the Introductory course.

The sheer volume of quantitative materials is another part of the problem.
For example, when thumbing through the latest issue of Social Indicators Research,
I glanced at an article which presented a multi-variate analysis of factors
influencing several measures of well being using national probability samples from
eight European nations. This is an extraordinary scientific accomplishment and a
much better empirical base than Weber or Durkheim had over their entire careers,

yet it is just one of half a dozen articles in one issue of one of hundreds of Sociological journals. Thirty years ago we were starving, now we are drowning. Neither is comfortab.᷒.

And my empirical colleagues shall not be spared either. It is one thing to assign materials we haven't read, another to assign materials we cannot read. I suspect the majority of Introductory teachers cannot read the majority of articles in the flagship journals. Ignorance of statistics is obviously important here. Nevertheless, my hunch is that a one semester statistics course would enable almost all of us to follow the argument in all but the most esoteric quantitative papers, and it is odd to be in a profession where the majority of the practitioners are just one course shy of being able to read a majority of the scholarly work in the field. But there is more to it than statistical training. I have taken such a course; indeed, I teach such a course; but I have a hell of a time reading these articles. Why? Because many of the authors have a trained antipathy toward substance. Sociology has a younger generation of extraordinarily bright young researchers who shrink from subs-tantive conclusions as vampires shrink from Holy Water. And no wonder, since they have been trained to believe previous Sociological substance is wrong, previous empiricists were bunglers, and their role models are not sociologists but mathematical statisticians and econometricians. Half the problem is that you can not read what they are writing, but the other half of the problem is that they are trying like hell to avoid saying anything because any substantive conclusion undrawn can not be challenged as violating some arcane assumption.

My aim here, aside from antagonizing teachers, theorists, and empiricists, has been two-fold:

First, I wanted to remind you of Price's paradox -- Sociology's main point of

contact with students is constructed almost entirely of its weakest intellectual achievements.

Second, I wanted to suggest the paradox is not simply the result of carelessness. There are real problems here, not the least of which is a reluctance of the most influential empiricists to go out on the substantive limb and say something definite about people.

Thus, I see my task as that of intermediary or marriage broker seeking the union of the bashful bridegroom, empiricism, and the trembling bride, the Intro course.

As for my chances of success, I note merely that Price's book is out of print and there are no plans for a second edition.

How to choose

There are approximately fifty thousand empirical results from which to choose and there is zero guidance from those intellectual morticians who embalm dead ideas and call themselves theorists. After mulling over what results I wished to push, I interviewed myself and figured out I was using two empirical and three substantive criteria. That is, I think empirical results are likely to be useful in introductory courses when -- they are:

1) very true

2) easily demonstrable

3) about causal systems

4) sociological, not economic

5) thought provoking.

Obviously the findings we teach should be true in the sense of meeting the rules

of evidence for scientific research. I'd go beyond that, however, to urge the empirical materials in the introductory class be palpably, obviously, unambiguously, patently, in short, very true. My criterion here is pedagogic, not philosophical. If the finding is shaky, if there are important exceptions, if the measurement instrument is high strung, if the sample is less than fully representative, if the finding hasn't been repeatedly replicated, etc., etc., the student's attention and the teacher's will be diverted from the question of what it means to the question of whether it is true. The latter is an important question, but it is not, in my opinion, an appropriate central theme for the introductory class. Operationally, I'd put it this way: we should look for findings that can be routinely expected to come through loud and clear in any relevant data set, not those we hope will come through if we use just the right methods on just the right data.

The second empirical criterion is the finding should be demonstrable in the sense that the students themselves can test it. The second criterion is not in-dependent of the first. A finding that isn't true or isn't very true will be hard to demonstrate, but some very true findings are hard to demonstrate. For example, there are a number of regularities in sociometric data (reciprocity, transitivity, etc.) that are very true in the sense that they turn up in data set after data set. But they require so much technical explanation to set up the problem they are not very demonstrable. Similarly, it is very true that even after controlling for numerous relevant variables, women earn less than men, but the technical problems in teaching introductory students how to control for half a dozen variables are so great, I don't think this finding is very demonstrable.

I have preached elsewhere on the specifics of demonstrability (Davis, 1978, 1982). Here and now I only have time to fling out two slogans:

1) For demonstrating bivariate relationships regression lines are more demon -
strable than percentage tables, but beginning students find multi-variate
tables less magical than multi-variate regression.

2) I now believe standardization is the key to demonstrability in multi-variate
tables.

It is tempting to take the authoritarian route of announcing "science says"
when treating complicated statistical matters in the introductory course. Nevertheless,
I believe the more difficult route of demonstration is much more effective pedagogically
and much more consistent with the value system of science.

Among those findings which are very true and easily demonstrable, I'd give
priority to those that are causal, especially those that illustrate causal systems
or networks. I shall not be trapped into defining causality here, but I doubt I will
be misunderstood, since we all appreciate that the main theme in empirical sociology
in the last thirty years -- cutting across methods and content areas -- has been the
notion that our task is to discover, document, and interpret the operation of variables
linked in a network of direct and indirect causal flows. Luckily, most of the flavor
of systems analysis appears when one jumps from two to three variables and I don't
think it is necessary to fully decompose large path models to convey the important
ideas. Thus, the five examples I will present are all three-variable systems embedded
in a larger network.

Of those very true, easily demonstrable, causal systems, I'd give priority to those
which are more "Sociological". The point might seem trivially obvious, but I feel it
is necessary. Just as Sociological methods have been massively influenced by Econo-
metrics, the leading empirical research workers in Sociology seem committed to labor
economics as their theoretical underpining. For example, the correlation between

educational attainment and earnings is very true, easily demonstrable, and part of an important causal system, but to me it is not terribly sociological since it can be interpreted in terms of supply, demand, investment, etc. Having refused to define causal, I am not about to define Sociological, but it seems to me those findings where the natural interpretation uses the concepts of elementary economics (or psychology or whatever) have lesser priority in the Introductory sociology course.

Finally, I'm for incorporating those findings which are thought provoking, in the exact sense of provoking further thought. Very few true, demonstrable, causal, sociological findings are astoundingly counterintuitive or of such intrinsic intellectual elegance they evoke gasps, but some evoke further thought and some do not. There is a clear cut test here. If one can present the materials to a class, say "So what?" and then generate a five or ten minute discussion, the finding is thought provoking. For example, it is very true, demonstrable, causal, and sociological that Blacks are less likely than whites to report they are "happy" on survey measures of subjective welfare, but I'd find it hard to keep a discussion on this topic going for fifteen minutes -- if by discussion one means intellectual analysis rather than liberal breast beating. On the other hand it is just as true, demonstrable, causal, and sociological that Married people are happier than Single or Widowed or Divorced and that the three non-married groups have about the same levels of Happiness. I think you or I could get ten minutes of real discussion going from that.

The System

When I started on this paper I jotted down possible findings as they came into my head. I soon realized, however, 1) Educational attainment was central to most of the items on the list, and 2) I was mostly using parts of a larger causal model or framework. While the model has never been spelled out in a formal way and it draws on work scattered across demography, attainment process research, and survey analysis, I suspect most empirical sociologists, when thinking about factors influencing individuals in twentieth century America, work with a model something like Figure 1.

(Figure 1 is on page   24 .)

At the left we find four ascriptive variables: A) Age, sometimes interpreted as date of birth or birth cohort, B) Parental socio-economic status variables such as father's occupation or parental educational attainments, C) Ethnicity, including Race, Religion, and Region, and D) Sex. Following the ascriptive "givens", we have the pivotal achievement variable E) Educational attainment. Then come F) Adult SES variables such as occupation, income, and subjective social class, and G) Sundry attitudes and behaviors, i.e. the dependent variables in various substantive areas -- religiosity, politics, values, mental health, etc., etc., etc.

The seven clusters give 21 possible pairs or relationships. I have drawn in seven which I believe are most important:

AB -- Cohort differences in Parental SES, especially the secular decline in Farm origins and secular increase in parental educational levels

BC -- Ethnic and racial differences in family background, in particular the disadvantaged starting points of Black and Spanish speaking Americans.

AE -- The massive cohort shifts in Educational attainment

BE -- The persistent Educational advantage of the well born

CE -- Ethnic differences in Educational attainment, especially racial

EF -- The large correlation between Educational attainment and adult

occupational prestige

EG -- The "enduring effects" of Education

Educational attainment occupies a central position in the model, just as it
occupies a central position in Sociological analysis. Indeed, we can use it
to organize the main questions evoked by the model:

How do the ascriptive "givens" affect Educational attainment and what are
the trends in these relationships?

How does schooling influence our socioeconomic status as adults and to
what extent does schooling explain the associations between ascriptive
variables and adult SES?

To what extent does "class" (adult SES) affect our lives and what are the
relative contributions of Education and adult SES to these effects?

To what extent does "subculture" (ascriptive variables) affect our lives
and how much of these effects are mediated by schooling?

While only a fanatic would wish to estimate all the coefficients in the
model and all its paths   (remember some of the "variables" are clusters),
I believe a well informed Sociologist should be knowledgeable about the major
relationships and the subsystems which have received the most attention (for
example, BEF is the core of the Blau-Duncan model, AEG is the Stouffer "demo-
graphic" attroach to mass attitudes, BCE is the center of the Coleman report
controversy if one interprets E loosely, DEF is the core for analysing sex
discrimination in jobs, earnings, etc. etc.)

Obviously I also believe such materials can play an important role in the

1

Introductory course. One might, indeed, organize a complete course around them. I teach such a course, called American Society, and spend a full semester helping students to understand this model by analysing on-line data sets with conversational computer programs. For present purposes, however, I will select -- somewhat arbitrarily -- five chunks from the model which could be introduced individually or collectively in an introductory course. The five topics are:

AE: Cohorts and Educational Attainment

ACE and ADE: Ascriptive Factors in Educational Attainment

BE: Homogamy and the transmission of privilege

BEF: Education and Intergenerational Occupational Mobility

AEG: Education, Generation, and Attitude

With the limited time available, I can not go into much pedagogical detail. However, I wish to argue that my proposals are not Utopian or impractical. I have carried out each exercise or a close facsimile with beginning undergraduates. I will simply assume a situation something like this:

1) The unit begins with a lecture explanation of the model and a warm up assignment on computers in which the student is asked to run a simple, two-variable percentage table, e.g. find the Political Party percentages for three educational categories.

2) I assume the data are stored on-line in clean data sets and each student has access to a conversational table-making program.

3) Each unit requires a ten or fifteen minute introduction in class, half an hour or less of terminal time, half an hour of table making and thinking, and a thirty or forty minute discussion at the next class meeting.

4) The instructor may assign related readings or not as seems appropriate. Similarly, the instructor may find it useful to prepare handouts of code book materials, computer instructions, etc. ad lib.

Unit 1: Cohorts and Educational Attainment

In 1940 when the U.S. Census began asking about Educational Attainment, 24 per cent of those 25 years of age and older were High School Graduates. By 1980 the figure rose to 69 percent (1981 Statistical Abstract, Table 229), a 45 point change or 1.1% per year. In a little more than one generation we moved from a society where high school graduates were an elite to one where they are the mode.

The change is so striking it is a good starting point for our unit, especially since the seemingly innocent activity of running percentages by age leads to the subtle and important notion of "cohort replacement".

One can begin with a table like Table 1A, which gives the Educational percentages for six age groups in four Census years, 1950, 1960, 1970, and 1980. After discussing the table as a standard percentage table, one may point out that with ten year age breaks and ten year Census intervals, it is easy to track various "birth cohorts". For example, the boxes in Table 1A track the educations of Americans born in 1926-1935. In their early twenties (Ages 14-24 in 1950) they. had 10.5% with a year or more of college, at ages 25-34 this jumped to 22.2%, at 35-44 it was 24.3%, and at ages 45-54 in 1980 the figure is 28.0%.

After a bit more explanation and discussion, the class can be given the assignment of re-arranging the data so the rows are birth cohorts, the columns are ages, and the cell entries are proportions, as in Table 1B. This assignment needn't require a computer but it is not easy. (By demonstrable, I didn't necessarily mean trivially easy; I mean the problem can be presented without elaborate methodological instruction.)

When the class returns one checks to see how many got their table right and
then asks them to describe the patterns in the data. Fairly soon, they will see
two: 1) At each age there is a striking column difference (i.e. the cohort
differences in Education) and 2) In each row a sharp increase up to age 25-34
and little change after that (i.e. a monotonic, nonlinear Age effect).

Now it is time for the crucial part, the "Sociological so what ?". Two
themes should emerge. First, the data point up the enormous amount of Educational
change. For example, in the birth cohort of 1890 (1886-1895) 78% were less than
high school, while for the baby boomers of 1950, the percentage was down to 14.4
by the time they hit 30. Second, and more subtle, the class should see some of
the interesting properties of cohort replacement as a form of social change. We
generally think of social change as "conversion" of one sort or another, but
Table 1B shows how a society can change radically on a variable where individuals
experience very little personal change during their adult lives. If the discussion
continues, the implications of this mechanism for "generation gaps" and the like
should emerge.

Unit II: Ascriptive Factors in Educational Attainment

Having seen the overall trend in Educational attainment, it seems natural to
look at some of the variation. This is a good place to introduce the concept of
"ascribed status", noting that strong correlations between ascribed variables and
socioeconomic achievement are troublesome in terms of the official American value
system.

I use Race and Sex because data are easily available and because they "play
off each other" nicely.

One could simply send the class off to tabulate Race by Education and Sex by Education, but I find the problem becomes richer when one examines trends. After noting one may infer trends from cross-sectional data with a variable like Education that becomes "set" early in life (and a population without too much coming and going), one may ask the class to cross-tabulate their Ascribed variables by Education within Cohorts (or Age if the data do not span a long time period). I usually ask what they expect to find. I am always struck by how little they have thought about such questions. Harvard students seem to believe all Blacks were in slavery until around 1960 when Martin Luther King set them free and race differences in SES were abolished, so Black people should stop complaining. Being proper mass media liberals they also assume you can substitute Female for Black and Ms. Magazine for Dr. King and get about the same numbers.

The actual data, of course, don't come out that way, as shown in Table 2. (Table 2 and its successors are presented in highly condensed form. Students working on the same problems will and should generate arm loads of paper as they try various approaches.) I urge my classes to attack tables in three steps:

First, what is the physical pattern in the numbers? In Table 2 the main pattern is that differences get smaller as one moves from left to right, except for the Sex difference in 0-11 years.

Second, how can you translate the patterns into English propositions about people? In Table 2, one might end up with something like this:

1) Race differentials in Education have declined steadily throughout the Century, but they aren't gone yet.

2) There never was a big Sex difference in High School Graduation, and the Female disadvantage in College doesn't show a nice linear decline.

(Somewhere around here one should indicate that contemporary enrollment data on cohorts too young to be in adult samples suggest a rapid closing in the sex

gap for college. In a longer unit a separate exercise on current enrollment figures is usually quite successful.)

Third, I try to explore the Sociological So-whats, i.e. the thought provoking aspects. Here, the following themes often emerge:

1) Trends in ascriptive differences are longer and more gradual than we tend to think.

2) Given the nature of cohort replacement, we will be living with non-trivial Race and Sex differences in Education within the adult population for the next few decades, regardless of what happens in the youngest cohorts.

3) The tendency of ideologues to equate Blacks and Females is a bit over-simple

Unit III: Homogamy and the Transmission of Privilege.

Having drawn the distinction between Achieved and Ascribed characteristics, one may observe while we achieve our own socio-economic status, our parents' SES is an ascribed variable -- in short, it is time to look at the Sociologist's favorite topic, mobility. I start with Educational mobility, although it has received less research attention than Occupational mobility. However, it has a nice Sociological so-what that occurs because both parents have educations while often only one has an occupation.

As a start, one may simply ask the class to cross-tab mother's education and respondent's education, father's education and respondent's education and then all three variables. Table 3 shows the results, rather striking bivariate associations and clear cut effects for both parental variables in the three way tab. In English, the higher the Education of either parent, the farther the son or daughter goes in school. (Ambitious students who wish to look at these relationships within birth cohorts will find little trend. Super ambitious students who wish to introduce sex

into the tabulations will find that each parent has about the same apparent influence on sons as on daughters.)

The immediate reaction to these findings is usually ideological and ambivalent. Students generally observe the phenomenon "isn't fair" but then realize they almost all come from College level families and in a fair system they might not be enjoying the myriad pleasures of Cambridge, Mass. At this point the discussion tends to drift off into unprofitable conjectures about heredity, environment, quality of secondary schools and the like. To bring it back into Sociological focus, it is useful to focus on the concept of "mobility". Formally, of course, a positive correlation between origin and destination implies a reduction in mobility, but this will not be obvious to beginners. Therefore, I suggest an additional exercise. After defining mobility, I ask the students to cross-tab the three variables so the cases sum to 100 per cent over the entire table and then count up the proportion of adults who have more, less, or the same schooling as their parents (with two parents this is a bit tricky and students may differ legitimately in definitions of mobility). The top panel in Table 3A shows the results. Defining mobility as higher or lower attainment than either parent, I find 41.5% are upwardly mobile, 2.3% are downwardly mobile, and 56.2% are stable. I ask the class to remove the parental effect and repeat the analysis, i.e. to standardize the data. They use a simple cross-tab program which allows them to standardize by merely typing in the numbers of the rows to be changed and the new percentages. Naturally, I don't use the phrase "direct standardization". Instead, I develop exactly the s ne idea through the common sense notion, "What would happen if children in each parental educational type had the same amount of schooling?" The answer appears in panel 2 of Table 3A. In a random society upward mobility would increase 6.6 points, downward by 6.9 points and total mobility by 13.5. The notion that a "fair" system would have more downward mobility often evokes interesting discussions.

From this exercise the student should gain a clear definition of mobility, insignt into the logical relationship between parent-child correlations and mobility, and a feeling for the striking amount of Educational mobility in the contemporary U.S. The teacher may, or may not wish also to introduce the notion of "structural" mobility here.

The same three-variable system yields a second Sociological proposition. A classic statistical principle says when two predictor variables have the same sign net effect on a dependent variable, the stronger their positive relation with each other, the stronger their bivariate relations with the dependent variable. This doesn't seem very Sociological, but it leads to a rather interesting Sociological demonstration. We have seen that Mother's and Father's Educations each have a positive net effect on son's and daughter's schooling (Table 3B), table 4C shows parental educations are highly correlated: thus the statistical principle applies.

So what? Well, the similarity between spouses' Education is a famous Sociological finding known as "Homogamy" or "Assortive Mating". Putting that together with the previous discussion of mobility we get the following proposition: "Homogamy lowers mobility"; in other words, the tendency for husbands and wives to have similar status characteristics promotes transmission of these characteristics from parent to child and thus lowers the amount of social mobility.

Students can easily demonstrate the effect by adjusting their data so parents marry at random educationally. The right hand column in Table A shows the bi-variate associations after such adjustments. You can see that if college parents married randomly, their proportion of college going children would drop from 70 to 60 and if 0-11 parents married randomly their proportion of college bound children

would go up about 5 points.

Once a class grasps the statistical patterns, they find the Sociological principles rather interesting, in particular, the insight they give into the functions of college social life, fraternities and sororities, country clubs, etc. Often they can spontaneously generalize the mechanism to religion and nationality.

The student who digs into this unit should gain considerable understanding of the abstract notion of inter-generational mobility, the logical relationship between parent-child correlations and mobility rates, and some of the social mechanisms promoting or dampening mobility rates.

The unit also illustrates a pedagogical principle. Students quickly tire of or bog down in endless lists of bivariate relationships. In order to give the course some intellectual "bite" it is necessary to present more general "principles" of which the particular data are merely one example. Regrettably, Sociological "theorists" (save for Peter Blau) haven't given us any, and seem unlikely to do so. Thus, while awaiting the theoretical harvest, we must take simple but subtle principles of statistics (the higher the correlation, the fewer cases off the main diagonals or the higher the zero order correlation of two predictors the higher their bivariate association with the dependent variable) and drape them in Sociology to produce non-obvious but scientifically valid principles.

Unit IV: Education and Intergenerational Occupational Mobility

Having studied trends in Educational attainment and the effects of key ascriptive variables (Race, Sex, Parental Education) on Schooling, we now shift to

the classic finding of modern empirical Sociology, Education as an intervening variable in inter-generational occupational mobility.

This section, of course, should begin with the standard Father-Son, White-Blue-Farm, mobility table and its empirical properties: a moderate amount of white-blue inheritance, a surprisingly high probability of downward mobility from White to Blue, the absolute excess of Blue-to-White over White-to-Blue because of differences in parental marginals, and the large outflow from farming. In my opinion, Sociology students should be as aware of these facts as Political Science students are of the three branches of government or psychology students of the effects of feedback on learning.

Moving on from the bivariate table, the next step is to consider the three variable system (BEF). The "point", of course, is the repeated finding that Education almost explains the correlation between father's and son's occupational prestige, in other words the BE and EF paths are much stronger than the BF path. Technically, the point is easy to demonstrate through a simple standardization exercise, as shown in Table 4 where we see the relationship between Father's and Son's occupational stratum first in the raw data and then after the data are adjusted so there is no class-origin difference in Education. In the adjusted data the Father's Occupation effect is cut in half, while the Educational Effect is little changed.

Since BEF is the central mystery and most spectacular triumph of empirical Sociology in the last two decades, it is awkward to admit I have to scratch for the Sociological-so-whats here.

At the descriptive level the striking phenomenon is the close tie between

Formal education and later occupation. College students these days are fashionably pouty about their occupational prospects (though few of them seem to feel college is so useless they are tempted to quit and go to work) and they tend to go overboard and assume the correlation between Education and Occupation has gone to zero. Data such as those in the bottom of Table 4 can be mildly surprising to them.

As for a more complex interpretation one may again use a statistical principle which says the intervening variable must have strong relationships to both X and Y to have a big influence on their correlation -- i.e. statistically it takes two to tango. I often ask my class to prepare a class room debate on the topic "Education: Great Equalizer or Perpetuator of Privilege? " Under the ground rule that arguments must be based on data, they soon appreciate the "two-step" principle -- that EF is a highly meritocratic relationship and BE a plutocratic one, i.e. the variable Education is neither heroic nor naughty, but it is involved in two relationships with opposite value loadings. This insight into systems thinking can be reinforced by asking them to use the standardization program to construct a social system that is both fair and efficient. Their struggles are usually instructive.

Unit V: Education, Generation, and Attitude

So far, we have seen Educational attainment as a dependent variable related to date of birth, race, sex, and parental SES and then as a mediating variable preserving ascriptive differences in occupation to the extent they affect schooling while undoing them to the extent that plenty of Blacks, children from low SES backgrounds, and women get lots of schooling and plenty of whites, children from the top drawers, and men drop off the Educational escalator before it reaches the top.

To close the circle I suggest looking at Education as an independent variable
and Age, our first variable as a control.

There is no end to the possible variables affected by Education and it is
often useful to turn the class loose on an eclectic data set such as the GSS to
rv a variety of items. One general proposition that works regularly is this:

> If the dependent variable taps tolerance or permissiveness
> about matters that depart from the social norms of small-town,
> white America around 1900, younger people and better Educated
> people will be for it.

The proposition seldom fails and is easy to demonstrate, as for example,
in Table 5 where we see data for the Stouffer item on Free Speech for Atheists.
Since we are vividly aware that Age and Education are highly related, the data
are also standardized by giving each age category the same (marginal) educational
distribution. The point is obvious: both Age and Education promote tolerance
and their joint effect is considerable: among the youngest best educated group
we see 92.3% liberal, among the oldest, least educated 34.1%, the youngest high
school drop outs are about as liberal as the oldest college attenders.

As for the Sociological so-whats, I suggest:

1) The findings raise but do not answer the famous problem of Age v. Cohort
   effects. Will the hip modern generation turn conservative as it ages,
   or will stuffy oldsters be steadily replaced by cool baby boomers?

   (For a few items it is possible to create data sets in which cohorts can
   be followed through time. Most show increasing liberalism as cohorts
   have gotten older, but I'm not ready to call this Very True.)

2) This data set, like most, shows almost as much difference between the

older and middle ages as between the middle aged and young adults.
Again, the suggestion is of continuous change rather than sudden shifts.

3) The statistical pattern in such tables means those with the greatest
power (the older, well educated) and those with the least power (the
younger, ill-educated) will tend to have similar opinions.

4) The powerful effects of Education no doubt mitigate inter-generational
conflicts within families since parents and children will tend to have
similar educations.

Conclusion

Are there any morals to these five stories?

First, I see no practical reason why intellectually stimulating quantitative
materials can not be introduced in any Introductory Sociology Course. The availa-
bility of data, time sharing computers, and simple techniques such as standardi-
zation make it possible to introduce serious work using actual data without
lengthy or esoteric methodological training. I know; I do it week after week.

Second, I have learned from my decade of work on this problem that the
substantive challenge is enormous. So much of what we consider important Sociology
is vague, tautological, or ideological that it is useless for exercises such as
those in this paper. So much of what we consider advanced research is narrow,

esoteric, and substantively trivial that it too is useless. While we have
thousands of findings and thousands of ideas, we do not have thousands of
instances where solid findings and interesting ideas can be combined and
made accessible to the beginning student.

The search for such true, demonstrable, causal, sociological and thought
provoking ideas is exciting and rewarding. It is too important to be left to
the handful of us who have toiled on this task. If the five examples in this
paper tempt you to imitate them or were so unclear, outrageous and wrong as to
stimulate you to develop your own, my time and time sharing have been well spent.

References Cited

James A. Davis

   1978 Using Computers to Teach Social Facts

          Teaching Sociology (April) 5:235-257

   1982 Extending Rosenberg's Technique for Standardizing Percentage Tables

          NORC. litho.

James L. Price

   1969 Social Facts: Introductory Readings

          The MacMillan Company.

Figure 1

The Schematic Stratification-Demographic-Survey Research Model

(Arrows indicate major relationships; blanks do not imply
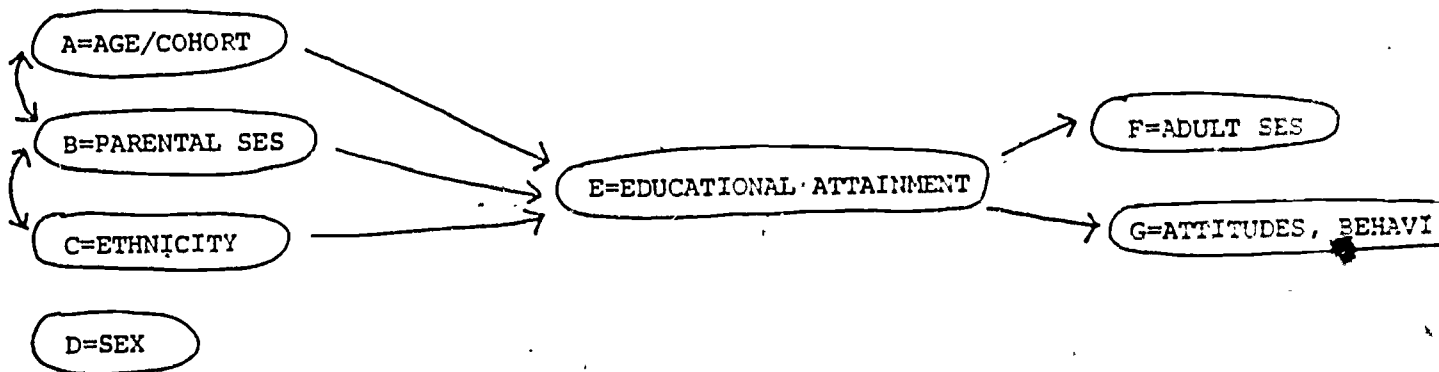the absence of a relationship)

Table 1

AGE/COHORT and EDUCATIONAL ATTAINMENT

(A) Age

Year	Education	14-24	25-34	35-44	45-54	55-64	65+
1950	13+	.105	.171	.155	.130	.100	.076
	12	.238	.331	.226	.154	.120	.100
	0-11	.657	.498	.619	.716	.780	.824
		1.000	1.000	1.000	1.000	1.000	1.000
1960	13+	.113	.222	.184	.159	.129	.092
	12	.244	.359	.332	.218	.137	.099
	0-11	.643	.419	.484	.623	.744	.809
		1.000	1.000	1.000	1.000	1.000	1.000
1970	13+	.181	.299	.243	.198	.167	.123
	12	.261	.416	.373	.341	.233	.144
	0-11	.558	.285	.383	.461	.600	.733
		1.000	1.000	.999	1.000	1.000	1.000
1980	13+	**	.458	.369	.280	**	**
	12		.397	.413	.402		
	0-11		.144	.219	.317		
			.999	1.001	.999		

* Sources: 1950-1960-1970 = Decennial Census Subject Reports
            1980 = 1981 Statistical Abstract, p. 142, Table 232

** = Data not given in original source

☐ = Birth cohort of 1926-1935

(B) Same Data Arranged to Show Age and Cohort Effects

Year of Birth	14-24	25-34	35-44	45-54	55-64
			Proportion 13+		
1946-1956	.181	.458			
1936-1945	.113	.299	.369		
1926-1935	.105	.222	.243	.280	
1916-1925		.171	.184	.198	
1906-1915			.155	.159	.167
1896-1905				.130	.129
1886-1895					.100
			Proportion 0-11		
1946-1956	.558	.144			
1936-1945	.643	.285	.219		
1926-1935	.657	.419	.383	.317	
1916-1925		.498	.484	.461	
1906-1915			.619	.623	.600
1896-1905				.716	.733
1886-1895					.780

Table 2

RACE AND SEX DIFFERENCES IN EDUCATIONAL ATTAINMENT - AND THEIR TRENDS *

	Birth Cohort					
	1923 or Before	N	1924-1939	N	1940-1959	N
Proportion 13+						
all cases	.211	(3358)	.303	(2357)	.396	(3234)
by Race						
Black	.098	(396)	.224	(272)	.313	(412)
Other	.226	(2962)	.313	(2085)	.409	(2822)
Diff.	-.128		-.089		-.095	
by Sex						
Female	.189	(1806)	.237	(1285)	.345	(1724)
Male	.238	(1552)	.382	(1072)	.456	(1510)
Diff.	-.049		-.145		-.111	
Proportion 0-11						
all cases	.545		.330		.210	
by Race						
Black	.758		.522		.330	
Other	.516		.306		.193	
diff.	+.241		+.217		+.137	
by Sex						
Female	.535		.321		.218	
Male	.555		.342		.201	
diff.	-.020		-.021		+.017	

* Source: NORC General Social Surveys, 1972-3-4-5-6-7, pooled.

Table 3

FAMILY BACKGROUND (PARENTAL EDUCATION) AND EDUCATIONAL ATTAINMENT*

A) Proportion of Respondents with 13 or more Years of Schooling

Parental Education	Raw Data	N	Random Marriage	N
Father				
13+	.731	(647)	.597	(647)
12	.456	(952)	.413	(952)
0-11	.243	(2947)	.289	(2947)
Hi v. low	+.488		+.308	
Mother				
13+	.711	(557)	.596	(557)
12	.479	(1305)	.440	(1305)
0-11	.224	(2684)	.270	(2684)
Hi v. Low	+.487		+.326	

B) Proportion 13+ by Both Parents

	Mother's Education					
Father's Education	0-11	N	12	N	13+	N
13+	.487	(119)	.711	(253)	.855	(275)
12	.346	(254)	.468	(560)	.609	(138)
0-11	.197	(2311)	.372	(492)	.535	(144)

C) Educational Homogamy

	Mother's Education				
Father's Education	0-11	12	13+	Total	N
13+	.184	.391	.425	1.000	647
12	.267	.588	.145	1.000	952
0-11	.784	.167	.049	1.000	2947

contd.

Table 3, contd.

D) Educational Mobility, Raw Data

Father	Mother	Respondent 0-11	12	13+	
13+	13+	0.110-	0.770-	5.169	
13+	12	0.220-	1.386	3.960	Mobility
13+	0-11	0.352	0.990	1.276	+ = 41.532
12	13+	0.132-	1.056	1.848	= 56.160
12	12	1.078-	5.477	5.763+	- = 2.310
12	0-11	0.836	2.816	1.936+	100.002
0-11	13+	0.264	1.210	1.694	
0-11	12	1.496	5.301	4.026+	
0-11	0-11	21.029	19.798+	10.009+	
Total		25.517	38.804	35.681	100.002%

E) Education Mobility, Standardized to Remove Parental Influence

Father	Mother	Respondent 0-11	12	13+	
13+	13+	1.544-	2.347-	2.158	
13+	12	1.420-	2.160	1.988	
13+	0-11	0.668	1.016	0.934	Mobility
12	13+	0.775-	1.178	1.083	+ = 48.115
12	12	3.143-	4.780	4.395+	= 42.658
12	0-11	1.426	2.168	1.994+	- = 9.229
0-11	13+	0.808	1.229	1.130	100.002
0-11	12	2.762	4.200	3.862+	
0-11	0-11	12.972	19.726+	18.138+	
Total		25.518	38.804	35.680	100.002%

* Source: NORC General Social Surveys, 1972-3-5-6-7-8, pooled

Table 4

EDUCATION AND INTERGENERATIONAL OCCUPATIONAL MOBILITY *

(Proportion of Sons with White Collar - Professional,
Managerial, Clerical, or Sales - Jobs)

Prior Variable	Raw Data	N	Education Standardized	N
Father's Occupation				
White Collar	.665	(762)	.540	(762)
Blue Collar	.354	(1483)	.377	(1483)
Farm	.244	(734)	.342	(734)
Hi v. Low	+.421		+.198	
Son's Education				
College graduate	.871	(536)	.852	(536)
Part college	.581	(551)	.552	(551)
High Graduate	.312	(815)	.323	(815)
9-11 years	.190	(506)	.208	(506)
0-8 years	.130	(571)	.163	(571)
Hi v. Low	+.741		+.689	

* Source: NORC General Social Surveys, 1972-3-4-5-6, pooled. Figures recalculated from tables in John W. Meyer, Nancy Brandon Tuma, and Krzystof Zagorski, "Educationa and Occupational Mobility: A Comparison of Polish and American Men" Am. Journ. Soc. (1979) 84:937-986.

Table 5

AGE, EDUCATION, AND ATTITUDES TO FREE SPEECH FOR ATHEISTS *

(Proportion "yes" in answer to "If somebody who is against all churches and religion wanted to make a speech against churches and religion in your community, should he be allowed to..?")

Prior Variable	Raw Data		Education Standardized	
Education				
13+	.839	(883)	.816	(883)
12	.702	(954)	.690	(954)
0-11	.449	(935)	.507	(935)
Hi v. Low	+.390		+.309	
Age				
18-33	.827	(956)	.806	(956)
34-53	.661	(925)	.650	(925)
54-98	.480	(891)	.541	(891)
Hi v. Low	+.347		+.265	

		Education		
		0-11	12	13+
	18-33	.714 (192)	.787 (376)	.923 (388)
Age	34-53	.453 (265)	.672 (360)	.833 (300)
	54-98	.341 (478)	.606 (218)	.682 (195)

* Source: NORC General Social Surveys, 1976-1977, pooled